

1. Cosmetic and/or dermatological composition intended for treating keratin fibres, in particular 5 human keratin fibres and more particularly human hair, comprising, in a support which is suitable for keratin fibres:

(a) at least one enzyme of 2-electron oxidoreductase type in the presence of at least one donor for the said 10 enzyme;

(b) at least one substantive polymer chosen from the group consisting of:

(i) cationic cellulose derivatives;

(ii) dimethyldiallylammonium halide homopolymers and 15 copolymers of dimethyldiallylammonium halide and of (meth)acrylic acid;

(iii) methacryloyloxyethyltrimethylammonium halide homopolymers and copolymers;

(iv) polyquaternary ammonium polymers;

20 (v) vinylpyrrolidone polymers containing cationic units;

(vi) mixtures thereof.

2. Composition according to Claim 1, characterized in that the 2-electron oxidoreductase is chosen from 25 uricases of animal, microbiological or biotechnological origin.

3. Composition according to Claim 1 or 2, characterized in that the 2-electron oxidoreductase(s) represent(s) from 0.01 to 20% by weight relative to the 30 total weight of the composition.

4. Composition according to Claim 3, characterized in that the 2-electron oxidoreductase(s) represent(s) from 0.1 to 5% by weight relative to the total weight of the composition.

35 5. Composition according to Claim 2, characterized in that the donor (or substrate) for the said 2-

00000000000000000000000000000000

electron oxidoreductase is chosen from uric acid and its salts.

6. Composition according to any one of the preceding claims, characterized in that the donor(s) represent(s) from 0.01 to 20% by weight relative to the total weight of the composition.

5 7. Composition according to Claim 6, characterized in that the donor(s) represent(s) from 0.1 to 5% by weight relative to the total weight of the composition.

10 8. Composition according to any one of Claims 1 to 7, characterized in that the cellulosic substantive polymers are quaternized cellulose ether derivatives.

9. Composition according to any one of Claims 1 to 7, characterized in that the substantive polymers of 15 dimethyldiallylammonium halide polymer or copolymer type are chosen from:

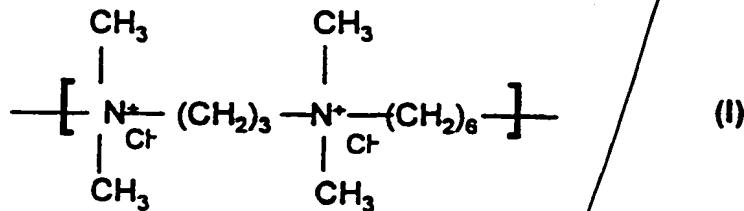
10 - the crosslinked poly(methacryloyloxyethyltrimethylammonium chloride) homopolymers, as a 50% dispersion in mineral oil,
20 - the crosslinked copolymer of acrylamide and of methacryloyloxyethyltrimethylammonium chloride (20/80 by weight), as a 50% dispersion in mineral oil,
25 - the methosulphate of the copolymer of methacryloyloxyethyltrimethylammonium and of methacryloyloxyethyldimethylacetylammmonium.

10. Composition according to any one of Claims 1 to 7, characterized in that the substantive polymers of the dimethyldiallylammonium halide polymer type are chosen from:

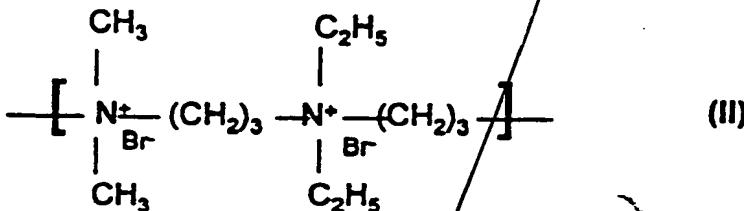
30 - dimethyldiallylammonium chloride homopolymers,
- the copolymer of dimethyldiallylammonium chloride and of acrylic acid.

11. Composition according to any one of Claims 1 to 7, characterized in that the substantive polymers of 35 the polyquaternary ammonium type are chosen from:
polymers consisting of repeating units

corresponding to formula (I) below:

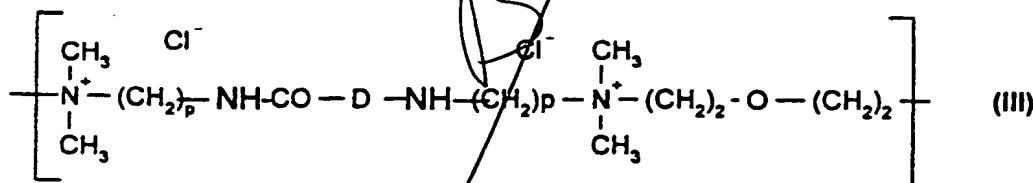


- polymers consisting of repeating units corresponding to formula (II) below:



5

- polymers consisting of repeating units corresponding to formula (III) below:



in which p denotes an integer ranging from 1 to 6
10 approximately, D can be zero or can represent a group
- $(\text{CH}_2)_r\text{-CO-}$ in which r denotes a number equal to 4 or
to 7.

12. Composition according to any one of Claims 1 to
7, characterized in that the substantive polymers of
15 the vinylpyrrolidone polymer type containing cationic
units are chosen from:

- a) vinylpyrrolidone polymers containing dimethylamino-ethyl methacrylate units;
- b) vinylpyrrolidone polymers containing methacrylamido-propyltrimethylammonium units;
- c) vinylpyrrolidone polymers containing methylvinylimidazolium units.

13. Composition according to any one of Claims 1 to
12, characterized in that the concentration of

SEARCHED - SERIALIZED

-34-

substantive polymer can range between 0.01 and 10% relative to the total weight of the composition, and preferably between 0.1 and 5%.

14. Ready-to-use composition according to any one of Claims 1 to 13, for the oxidation dyeing of keratin fibres, and in particular human keratin fibres such as the hair, of the type also comprising, in a medium which is suitable for keratin fibres, at least one oxidation base and, optionally, one or more couplers.
15. Composition according to Claim 14, characterized in that the oxidation bases are chosen from para-phenylenediamines, double bases, ortho- or para-aminophenols and heterocyclic bases, as well as the addition salts of these compounds with an acid.
16. Composition according to Claim 14 or 15, characterized in that the oxidation bases are present in concentrations ranging from 0.0005 to 12% by weight relative to the total weight of the composition.
17. Composition according to any one of Claims 14 to 16, characterized in that the couplers are chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers, and the addition salts of these compounds with an acid.
18. Composition according to any one of Claims 14 to 17, characterized in that the couplers are present in concentrations ranging from 0.0001 to 10% by weight relative to the total weight of the composition.
19. Composition according to any one of Claims 14 to 18, characterized in that the addition salts with an acid for the oxidation bases and the couplers are chosen from the hydrochlorides, hydrobromides, sulphates, tartrates, lactates and acetates.
20. Composition according to any one of Claims 14 to 19, characterized in that it also contains direct dyes.
21. Composition according to any one of Claims 1 to

20, characterized in that the medium which is suitable for the keratin fibres (or support) consists of water or of a mixture of water and at least one organic solvent.

5 22. Composition according to any one of Claims 1 to 21, characterized in that the organic solvents can be present in proportions preferably ranging from 1 to 40% by weight relative to the total weight of the composition, and even more preferably ranging from 5 to 10 30% by weight.

23. Composition according to any one of Claims 1 to 24, characterized in that the pH ranges from 5 to 11 and preferably from 6.5 to 10.

24. Composition according to any one of Claims 1 to 15 23, characterized in that it also contains at least one cosmetic adjuvant used conventionally in compositions for dyeing, permanently reshaping or bleaching the hair, chosen from the group consisting of anionic, cationic, nonionic, amphoteric or zwitterionic 20 surfactants or mixtures thereof, anionic or nonionic polymers, inorganic or organic thickeners, anti-oxidants, enzymes other than the 2-electron oxido-reductases, penetration agents, sequestering agents, fragrances, buffers, dispersing agents, conditioners, 25 film-forming agents, preserving agents and opacifiers.

25. Process for dyeing keratin fibres, and in particular human keratin fibres such as the hair, characterized in that at least one ready-to-use dye composition as defined in any one of Claims 14 to 24 is 30 placed on the said fibres for a period which is sufficient to develop the desired coloration.

26. Process according to Claim 25, characterized in that it includes a first step which consists in separately storing, on the one hand, a composition (A) 35 comprising, in a medium which is suitable for dyeing, at least one oxidation base and optionally at least one

P0020082202060

coupler as defined in any one of Claims 14 to 19, and, on the other hand, a composition (B) containing, in a medium which is suitable for the keratin fibres, at least one enzyme of 2-electron oxidoreductase type in 5 the presence of at least one donor for the said enzyme as defined in any one of the preceding claims, and then in mixing them together at the time of use, before applying this mixture to the keratin fibres; composition (A) or composition (B) containing the 10 substantive polymer as defined in the preceding claims.

27. Multi-compartment dyeing device or "kit", characterized in that it contains a first compartment containing composition (A) as defined in Claim 26 and a second compartment containing composition (B) as 15 defined in Claim 26.

28. Process for treating keratin fibres, in particular the hair, in order to obtain a permanent reshaping of this hair, in particular in the form of permanent-waved hair, this process comprising the 20 following steps: (i) a reducing composition is applied to the keratin fibres to be treated, the keratin substance being placed under mechanical tension before, during or after the said application, (ii) the keratin substance is optionally rinsed, (iii) an oxidizing 25 composition as defined in any one of Claims 1 to 13 and 21 to 24 is applied to the optionally rinsed keratin substance, (iv) the keratin substance is optionally rinsed again.

29. Process for treating keratin fibres, in 30 particular the hair, in order to bleach them, this process comprising the application of an oxidizing composition as defined in any one of Claims 1 to 13 and 21 to 24 optionally containing an auxiliary oxidizing agent and a second step of rinsing the keratin fibres.

PDD
B1